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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

05/27/2010

Louis P. Herzberg
Intellectual Property Law Dept.
IBM Corporation
P.O. Box 218
Yorktown Heights, NY 10598

EXAMINER

SMITH, MARCUS

ART UNIT

PAPER NUMBER

2467

DATE MAILED: 05/27/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,665	04/14/2004	Robert Haas	CH920020014US1	7531

TITLE OF INVENTION: DATA PATH-BASED SERVICE DEPLOYMENT IN HIERARCHICAL NETWORKS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/27/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 05/27/2010

Louis P. Herzberg
 Intellectual Property Law Dept.
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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/27/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
SMITH, MARCUS	2467	370-230000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 861 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 861 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/824,665

Applicant(s)

HAAS, ROBERT

Examiner

MARCUS R. SMITH

Art Unit

2467

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 2/09/10.
2. ☒ The allowed claim(s) is/are 1, 7, 3, 11, 4-6, and 14 (resp. renumbered as claims 1-8).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/Pankaj Kumar/
Supervisory Patent Examiner, Art Unit 2467

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven Fischman on May 20, 2010.

The application has been amended as follows:

The added material will be underline and the deleted material of the claims will be enclosed within brackets.

Claim 1: (Currently Amended) A method comprising optimizing a data path and forwarding data from a start node to an end node over a hierarchical network, wherein the hierarchical network comprises first nodes, on a first layer of the hierarchical network, each first node ~~being capable to perform~~ for performing one of or more first node functions, wherein one or more of said first node functions are to be applied on said data while forwarding said data through the hierarchical network, wherein a number of data path options through the first nodes are determined, for each data path option, the first nodes, having one or more assigned first node functions, wherein a first capacity value for each of said first nodes and for each of said first node functions ~~and/or~~ combinations of said first node functions are provided; and wherein the data is forwarded through the data path which is determined by the data path option having a minimum overall capacity regarding the first capacity values; characterized in

that said one or more of said first nodes comprises a logical node comprising a hierarchical sub-network having one or more second physical nodes on lower layers of the hierarchical sub-network, the second physical nodes unknown to the start node, each of the second physical nodes assigned to one of the first logical nodes ~~is capable to perform~~ for performing one or more second node functions, wherein said first node functions of the first nodes are provided by said second node functions, wherein providing one of said first capacity values for one specific first node and for one specific first node function ~~and/or~~ one specific combination of said first node functions, including file following steps: determining a number of second data path options for the second physical nodes of the one specific first node to perform said one specific first node function, for each second data path option, the second physical nodes having one or more assigned second node functions, providing second capacity values for each of said second physical nodes and for each of said assigned second node functions; determining the overall capacity values of said second data path options with regard to the second capacity values; determining the minimum overall capacity value of any of said second data path options; and providing the minimum overall capacity value as the first capacity value.

Claim 3: (Currently Amended) A method according to claim 1, wherein the second nodes are physical nodes wherein the second capacity values depending on a data processing speed, a data handling speed ~~and/or~~ a buffering capacity related to the assigned second node functions.

Claim 4: (Currently Amended) A router device for determining a data path from a start node to an end node over a hierarchical network, wherein the hierarchical network comprises first nodes on a first layer of the hierarchical network, each ~~capable to perform~~ for performing one or more first node functions, wherein one or more of said first node functions are to be applied on said data while forwarding said data through the hierarchical network, said one or more of said first nodes comprising a logical node including a hierarchical sub-network having one or more second physical nodes on lower layers of the hierarchical network, the second physical nodes unknown to the start node, each of the second physical nodes assigned to one of the first logical nodes ~~is capable to perform~~ for performing one or more second node functions, wherein said first node functions of the first logical nodes are provided by said one or more second node functions, the router comprising: a first data path determining means to determine a number of data path options through the first logical nodes for each data path option, the first logical nodes having one or more assigned first node functions, a first means for determining the minimum overall capacity value of any of said first data path options regarding first capacity values for each of said first logical nodes and for each of said first node functions ~~and/or~~ combinations of said first node functions; receiving means for receiving said first capacity values for each of said first logical nodes and for each of said first node functions ~~and/or~~ combinations of said first node functions.

Claim 5: (Currently Amended) A router device according to claim 4 further comprising a ~~request transmitting means for~~ sending a request for first capacity values

for each of said first logical nodes and for each of said first node functions and/or combinations of said first node functions to each of said first logical nodes.

Claim 6: (Currently Amended) A network node amongst a plurality of network nodes of a hierarchical communications network, said network node comprising: a hierarchical sub-network having one or more physical sub-nodes on a lower layer of the hierarchical network, the physical subnodes being unknown to a start node on a first layer of said hierarchical communications network, each physical subnode ~~being able to execute~~ for executing at least one function, wherein a subnode capacity value is assigned to each subnode and to each function related to the respective physical subnode, a request receiving means to receive a request for providing overall capacity values related to a set of at least one specific function ~~able~~ to be executed by the network node, a data path determining means to determine a number of data path options for each of the functions of the set of at least one specific function to be executed by the network node, capacity determining means to determine an overall capacity value for each of the data path options and for each of the functions of said set of at least one specific function to be performed in the network node, wherein said overall capacity values of each data path option are determined with regard to said subnode capacity values provided for each of said physical subnodes and for each of said assigned specific functions; and transmitting means for a minimum overall capacity value for each of the specific functions of the set of one or more specific functions and for file assigned data path option as the requested overall capacity value.

Claim 7: (Canceled)

Claim 11: (Canceled)

Claim 14: (Currently Amended) An apparatus comprising means for optimizing a data path and means for forwarding data from a start node to an end node over a hierarchical network, wherein the hierarchical network comprises first nodes on a first layer of the hierarchical network, each first node ~~being capable to perform~~ for performing one or more first node functions, wherein one or more of said first node functions are to be applied on said data while forwarding said data through the hierarchical network, wherein a number of data path options through the first nodes are determined, for each data path option, the first nodes, having one or more assigned first node functions, wherein a first capacity value for each of said first nodes and for each of said first node functions ~~and/or~~ combinations of said first node functions are provided; and wherein the data is forwarded through the data path which is determined by the data path option having a minimum overall capacity regarding the first capacity values; characterized in that said one or more of said first nodes comprises a logical node comprising a hierarchical sub-network having one or more second physical nodes on lower layers of the hierarchical network, the second physical nodes unknown to the start node, each of the second physical nodes assigned to one of the first logical nodes is ~~capable to perform~~ for performing one or more second node functions, wherein said first node functions of the first nodes are provided by said second node functions, wherein providing one of said first capacity values for one specific first node and for one specific first node function ~~and/or~~ one specific combination of said first node functions, comprising: means for determining a number of second data path options for the

second nodes of the one specific first node to perform said one specific first node function, for each second data path option, the second nodes having one or more assigned second node functions, means for providing second capacity values for each of said second nodes and for each of said assigned second node functions; means for determining the overall capacity values of said second data path options with regard to the second capacity values; means for determining the minimum overall capacity value of any of said second data path options; and means for providing the minimum overall capacity value as the first capacity value.

Claim 16: (New) A computer program product including a non-transitory computer-readable storage medium having computer program instructions in which when executed on a computer instructs the computer to: optimizing a data path and forwarding data from a start node to an end node over a hierarchical network, wherein the hierarchical network comprises first nodes, on a first layer of the hierarchical network, each first node for performing one or more first node functions, wherein one or more of said first node functions are to be applied on said data while forwarding said data through the hierarchical network, wherein a number of data path options through the first nodes are determined, for each data path option, the first nodes, having one or more assigned first node functions, wherein a first capacity value for each of said first nodes and for each of said first node functions or combinations of said first node functions are provided; and wherein the data is forwarded through the data path which is determined by the data path option having a minimum overall capacity regarding the first capacity values; characterized in that said one or more of said first nodes

comprises a logical node comprising a hierarchical sub-network having one or more second physical nodes on lower layers of the hierarchical sub-network, the second physical nodes unknown to the start node, each of the second physical nodes assigned to one of the first logical nodes for performing one or more second node functions, wherein said first node functions of the first nodes are provided by said second node functions, wherein providing one of said first capacity values for one specific first node and for one specific first node function or one specific combination of said first node functions, including file following steps: determining a number of second data path options for the second physical nodes of the one specific first node to perform said one specific first node function, for each second data path option, the second physical nodes having one or more assigned second node functions, providing second capacity values for each of said second physical nodes and for each of said assigned second node functions; determining the overall capacity values of said second data path options with regard to the second capacity values; determining the minimum overall capacity value of any of said second data path options; and providing the minimum overall capacity value as the first capacity value.

Claim 17: (New) A computer program product as in claim 16, wherein the second nodes are physical nodes wherein the second capacity values depending on a data processing speed, a data handling speed or a buffering capacity related to the assigned second node functions.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Simmons (US 6,597,658), see figure 4 and Chartre et al. (US 7,180,866), see figures 3A and 3B.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS R. SMITH whose telephone number is (571)270-1096. The examiner can normally be reached on Mon-Thurs: 7:30 am - 5:00 p.m. and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on 571 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRS 5/07/10
/Pankaj Kumar/
Supervisory Patent Examiner, Art Unit 2467